

REMARKS

Claims 1-3, 5, 7, and 9-24 are currently pending in the subject application, and are presently under consideration. Claims 1-5, 7, and 9-24 are rejected. Claims 1, 3, and 12 have been amended. Claim 4 has been cancelled. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

I. Rejection of Claims 1, 18, and 19 Under 35 U.S.C. §103(a)

Claims 1, 18, and 19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,175,719 to Sarraf, et al. ("Sarraf"), in view of U.S. Patent No. 6,067,453 to Adiwoso, et al. ("Adiwoso"), and in further view of U.S. Patent No. 6,442,148 to Adams, et al. ("Adams"). Claim 1 has been amended. Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 1 has been amended and recites that each of the plurality of uplink antennas are repositionable to receive a test signal transmitted from a single earth station, and each of the plurality of downlink antennas are repositionable to retransmit the test signal to the single earth station. The combination of Sarraf, Adiwoso, and Adams does not teach or suggest amended claim 1. The amended elements of claim 1 are substantially similar to the elements of claims 15 and 16. The Office Action dated February 23, 2005 (at pages 15 and 16), has rejected claims 15 and 16 by asserting that the elements of claims 15 and 16 are taught by U.S. Patent No. 6,233,433 to Norin ("Norin"). Representative for Applicant respectfully disagrees.

Norin teaches that a satellite changes its position so that a receive antenna feeding a transponder under test is aligned with a ground test antenna (col. 4, ll. 27-30). Norin thus teaches that the satellite itself is repositioned, and therefore does not teach or suggest uplink antennas that are repositionable to receive a test signal transmitted from a single earth station, as recited in amended claim 1. Additionally, Norin teaches that the uplink test signals are converted to corresponding downlink signals by a mixer (col. 4, ll. 32-34). The downlink signals are combined (col. 4, ll. 42-43), and the combined downlink signal is amplified and transmitted from a wide angle transmit antenna that is received by the ground test antenna (col. 4, ll. 52-54).

Accordingly, the test system taught by Norin generates downlinks from a single wide angle transmit antenna, and therefore does not teach a repositionable downlink antenna to retransmit a test signal, as recited in amended claim 1. Therefore, the combination of the cited art does not teach or suggest amended claim 1. Withdrawal of the rejection of claim 1, as well as claims 2, 3, 5, and 18-22 which depend therefrom, is respectfully requested.

For the reasons described above, claims 1, 18, and 19 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

II. Rejection of Claims 2-5, 20, and 21 Under 35 U.S.C. §103(a)

Claims 2-5, 20, and 21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sarraf in view of Adiwoso in further view of Adams, as applied to claim 1 above, and further in view of U.S. Publication No. 2002/0032003 to Avitzour, et al. ("Avitzour"). Claim 3 has been amended. Claim 4 has been cancelled. Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claims 2, 3, 5, 20, and 21 depend from claim 1, which, as discussed above, is patentable over the cited art. Accordingly, dependent claims 2, 3, 5, 20, and 21 are also patentable over the cited art. Withdrawal of the rejection of claims 2, 3, 5, 20, and 21 is respectfully requested.

Claim 3 has been amended to include the elements from cancelled claim 4. Amended claim 3 recites that the plurality of first spot beams includes a plurality of primary beams and a plurality of secondary beams, said payload architecture being operative to select any of the plurality of primary beams to contain a gateway. The Office Action dated February 23, 2005 (at page 3) agrees that Avitzour teaches the use of only a single hub. However, the Office Action dated February 23, 2005, maintains the rejection of claim 3 by stating that "the set of beams associated with the Hub is a primary set of beams and the other sets are secondary sets of spot beams." (Office Action dated February 23, 2005, page 3, citing Avitzour, section 0009, ll. 1-3, and section 0037, ll. 4-5). Representative for Applicant respectfully disagrees. As Avitzour teaches the use of only a single hub, the payload architecture of the satellite system taught by Avitzour cannot select any of the beams associated with the hub to contain a gateway, because

only the spot beam that contains the hub can act as a gateway. Therefore, the combination of Sarraf, Adiwoso, Adams, and Avitzour does not teach or suggest that the plurality of first spot beams includes a plurality of primary beams and a plurality of secondary beams, said payload architecture being operative to select any of the plurality of primary beams to contain a gateway, as recited in amended claim 3. Withdrawal of the rejection of claim 3 is respectfully requested.

For the reasons described above, claims 2, 3, 5, 20, and 21 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

III. Rejection of Claims 7 and 9-16 Under 35 U.S.C. §103(a)

Claims 7 and 9-16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sarraf in view of Adiwoso in further view of Norin and in further view of Avitzour. Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 7 recites an input section to receive uplink signals from a plurality of first spot beams via any one of a plurality of uplink antennas and an output section to transmit a plurality of second spot beams via any one of a plurality of downlink antennas. The Office Action dated February 23, 2005, asserts that Adiwoso teaches an input section to receive uplink signals from a plurality of first spot beams via any one of a plurality of uplink antennas, an output section to transmit a plurality of second spot beams via any one of a plurality of downlink antennas (page 11, citing Adiwoso, col. 4, ll. 25-29; col. 6, ll. 11-18; col. 8, ll. 26-27). Representative for Applicant respectfully disagrees. The cited sections of Adiwoso teach that individual spot beams may be flexibly allocated between zero and six transponders such that bandwidth can be allocated in a flexible and reconfigurable manner (col. 6, ll. 11-18; col. 8, ll. 26-27). However, the cited sections of Adiwoso do not support the Examiner's assertion as they only teach flexible bandwidth allocation between uplinks and downlinks. Neither Adiwoso, nor any other cited art, teaches or suggests receiving the uplink signals via *any one of* a plurality of uplink antennas and transmitting second spot beams via *any one of* a plurality of downlink antennas (emphasis added), as recited in claim 7.

In addition, claim 7 recites that the payload architecture selectively switches said plurality of first spot beams to allow any uplink signal to act as a gateway signal for purposes of testing. The Office Action dated February 23, 2005, further asserts that this element is taught by Avitzour, stating that Avitzour teaches allowing any uplink signal to act as a gateway signal because there are a plurality of spot beams associated with the hub and thus any one of the beams can act as a gateway (page 12, citing Avitzour, section 0009, ll. 1-3). Representative for Applicant respectfully disagrees. Avitzour teaches an outbound channels path that goes from the hub to four spot beams via the satellite to small terminals (see, *e.g.*, section 0044, ll. 1-4; section 0045, ll. 3-6). Avitzour also teaches an inbound channels path that goes from the four spot beams associated with the small terminals to the hub via the satellite (section 0047, ll. 3-7). Avitzour therefore teaches that communications via the satellite are either from the hub to the spot beams or from the spot beams to the hub. As described above, the Examiner concedes that Avitzour only teaches a single hub. Avitzour thus teaches that only the spot beam containing the hub can act as a gateway, and therefore does not teach or suggest that any one of the beams associated with the hub can act as a gateway, as asserted by Examiner. Accordingly, neither Avitzour nor any of the other cited art, individually or in combination, teaches or suggests that the payload architecture selectively switches said plurality of first spot beams to allow any uplink signal to act as a gateway signal for purposes of testing, as recited in claim 7. Withdrawal of the rejection of claim 7, as well as claims 9-13 which depend therefrom, is respectfully requested.

Claim 10 recites that the payload architecture allows connectivity, for test purposes only, of one of said plurality of second spot beams corresponding to a cell with one of said plurality of first spot beams corresponding to said cell. The Office Action dated February 23, 2005, recites that Norin teaches claim 10 (page 12). Representative for Applicant respectfully disagrees. As described above regarding amended claim 1, Norin teaches that uplink test signals are converted to corresponding downlink signals by a mixer (col. 4, ll. 32-34), the downlink signals are combined (col. 4, ll. 42-43), and the combined downlink signal is amplified and transmitted from a wide angle transmit antenna that is received by the ground test antenna (col. 4, ll. 52-54). Accordingly, the test system taught by Norin generates downlinks from a single wide angle

transmit antenna, such that Norin only teaches a single, wide angle spot beam downlink. Norin thus does not teach or suggest a plurality of second spot beams corresponding to downlinks for the purposes of testing. Therefore, neither Norin nor any other cited art, individually or in combination, teaches or suggests that the payload architecture allows connectivity, for test purposes only, of one of said plurality of second spot beams corresponding to a cell with one of said plurality of first spot beams corresponding to said cell, as recited in claim 10. Withdrawal of the rejection of claim 10 is respectfully requested.

Claim 11 recites that the testing operates in conjunction with a control system to reposition at least one first antenna and least one second antenna so that each one of said plurality of first spot beams and said plurality of second spot beams can be tested from said single ground station, similar to amended claim 1. For at least the reasons described above regarding amended claim 1, claim 11 is also patentable over the cited art. Withdrawal of the rejection of claim 11 is respectfully requested.

Claim 12 has been amended and recites that the plurality of first spot beams includes spot beams corresponding to primary cells and secondary cells, the payload architecture being operative to select any of the primary cells to contain a gateway, similar to claim 3. For at least the reasons described above regarding amended claim 3, claim 12 is patentable over the cited art. Withdrawal of the rejection of claim 12, as well as claim 13 which depends therefrom, is respectfully requested.

Amended claim 14 recites receiving a plurality of first spot beams at said satellite via any one of a plurality of uplink antennas, transmitting a plurality of second spot beams from said satellite via any one of a plurality of downlink antennas, sending a test signal from a single ground station on said first spot beam and receiving the test signal at said second spot beam to test said first spot beam and said second spot beam, and wherein any of said plurality of first spot beams can act as a gateway for the purposes of testing said first spot beam and said second spot beam, similar to claims 7 and 10. For at least the reasons described above regarding claims 7 and 10, amended claim 14 is patentable over the cited art. Withdrawal of the rejection of claim 14, as well as claims 15-17 which depend therefrom, is respectfully requested.

Claim 16 recites that said satellite comprises a first antenna or antenna set receiving said plurality of first spot beams and a second antenna or antenna set transmitting said plurality of second spot beams, and said first antenna or antenna set and said second antenna or antenna set are repositioned for each pair of one of said plurality of first spot beams and one of said plurality of second spot beams corresponding to a cell, similar to amended claim 1. For at least the reasons described above regarding amended claim 1, claim 16 is patentable over the cited art. Withdrawal of the rejection of claim 16 is respectfully requested.

For the reasons described above, claims 7 and 9-16 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

IV. Rejection of Claim 17 Under 35 U.S.C. §103(a)

Claim 17 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Sarraf in view of Adiwoso in further view of Norin in further view of Avitzour, and further in view of U.S. Patent No. 6,288,673 to Dolmeta, et al. ("Dolmeta"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 17 recites that the satellite comprises one or more shared antenna apertures receiving the plurality of first spot beams and transmitting the plurality of second spot beams, and the shared antenna aperture is repositioned for each pair of one of the plurality of first spot beams and one of the plurality of second spot beams corresponding to a cell. Claim 17 depends indirectly from claim 14, which, as discussed above, is patentable over the cited art. The addition of Dolmeta does not cure the deficiencies of the combination of Sarraf, Adiwoso, Norin, and Avitzour to teach or suggest claim 14, and therefore, dependent claim 17 is also patentable over the cited art. Accordingly, withdrawal of the rejection of claim 17 is respectfully requested.

V. Rejection of Claim 22 Under 35 U.S.C. §103(a)

Claim 22 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Sarraf in view of Adiwoso in further view of Adams in further view of Avitzour, as applied to Claim 2

above, and further in view of Norin. Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 22 recites that the gateway is operative to generate an uplink signal and monitor a downlink signal corresponding to the uplink signal for the purpose of testing. Claim 22 depends indirectly from claim 1, which, as discussed above, is patentable over the cited art. The addition of Norin does not cure the deficiencies of the combination of Sarraf, Adiwoso, Adams, and Avitzour to teach or suggest claim 1, and therefore, dependent claim 22 is also patentable over the cited art. Accordingly, withdrawal of the rejection of claim 22 is respectfully requested.

VI. Rejection of Claim 23 Under 35 U.S.C. §103(a)

Claim 23 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Sarraf in view of Adiwoso in further view of Norin and in further view of Avitzour, as applied to Claim 7 above, and further in view of Adams. Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 23 recites a plurality of 1:3 power dividers operative to route any of the uplink signals to any of the plurality of second spot beams, such that any uplink signal can act as a gateway beam for the purposes of testing. Claim 23 depends from claim 7, which, as discussed above, is patentable over the cited art. The addition of Adams does not cure the deficiencies of the combination of Sarraf, Adiwoso, Norin, and Avitzour to teach or suggest claim 7, and therefore, dependent claim 23 is also patentable over the cited art. Accordingly, withdrawal of the rejection of claim 23 is respectfully requested.

VII. Rejection of Claim 24 Under 35 U.S.C. §103(a)

Claim 24 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Sarraf in view of Adiwoso in further view of Norin in further view of Avitzour, as applied to Claim 7, and further in view of U.S. Patent No. 5,194,874 to Perrotta ("Perrotta"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 24 recites that the performance of the plurality of first and second spot beams is tested by re-pointing a satellite antenna structure in a scan pattern. Claim 24 depends from claim 7, which, as discussed above, is patentable over the cited art. The addition of Perrota does not cure the deficiencies of the combination of Sarraf, Adiwoso, Norin, and Avitzour to teach or suggest claim 7, and therefore, dependent claim 24 is also patentable over the cited art. Accordingly, withdrawal of the rejection of claim 24 is respectfully requested.

Serial No. 10/044,131

Docket No. NG(ST)7227

CONCLUSION


In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,

Date

5/17/05



Christopher P. Harris
Registration No. 43,660

CUSTOMER NO.: 26,294

TAROLLI, SUNDHEIM, COVELL, & TUMMINO L.L.P.
526 SUPERIOR AVENUE, SUITE 1111
CLEVELAND, OHIO 44114-1400
Phone: (216) 621-2234
Fax: (216) 621-4072